We've finished the June 20, 2017 Bulletin 120 (B120) forecast update. The forecasts include observed conditions through the morning of June 20, 2017.

The forecast is posted at: http://cdec.water.ca.gov/cgi-progs/iodir?s=b120up

Forecast Summary:
Continued excessive snow melt runoff rates have resulted in significant rises in the April-July forecast for the Mokelumne, Tuolumne, San Joaquin, and Kings Rivers.

For the rivers considered in this update, the latest forecasts range from 142 percent for the Inflow to Lake Shasta to 253 percent on the Kern River and shows an average increase of about 6 percent in the median April-July (AJ) forecast volumes. While many Northern Sierra forecasts remained about the same as last week, the largest increases were in the San Joaquin and Kings River watersheds as full natural flow runoff continues at extremely high rates. The AJ median forecast remains above 200 percent for the Stanislaus through the Kings Rivers as well as the Kern River. Statewide, the AJ percent of average is expected to be about 191 percent of average. The statewide Water Year percent of average forecast is higher at 225 percent.

Runoff:
Runoff trends during the first three weeks of June continue at a very high rate in the Central and Southern Sierra Nevada due to rapid snow melt.

For the Trinity, Shasta, and Northern Sierra basins, runoff rates for June in this region range from 109 percent for the Inflow to Lake Shasta to 199 percent on the American River. While most snow has melted out in the Trinity, Shasta, and Feather basins, there is still abundant snow for this late in the season to drive significant runoff in the Yuba (189 percent of average in June) and the American River basins.

Further south in the Central and Southern Sierra Nevada, runoff increased due to near record temperatures. Another snowmelt peak has occurred near or even above the peak observed so far during the April-July period. Through the first three weeks of the month, runoff rates for all rivers from the Mokelumne River south to the Kern are running above 230 percent for the month of June, excluding the Kaweah and Tule Rivers at 216 percent and 156 percent, respectively. Both the Kings (257 percent) and Kern (253 percent) Rivers are running above 250 percent of average for June.

Precipitation:
Precipitation for the 2016-2017 water year has accumulated at the rates of average shown in the table below.

Region/Index	WY-to-date precipitation as a % of average (inches) through June 22, 2017	Month-to-date precipitation as a % of month total (inches) through June 22, 2017
Northern Sierra 8-Station Index	195 (94.2 inches)	80 (0.8 inches)
San Joaquin 5-Station Index	181 (71.5 inches)	16 (0.1 inches)
Tulare Basin 6-Station Index	163 (46.1 inches)	25 (0.1 inches)

Any precipitation contributing to the Northern Sierra 8-Station Index adds to the record which had been 88.5 inches in 1983.

Snowpack:
The snowpack as of the morning of June 22, 2017 stands at the following (based on snow sensors):

Region	Snow Water Equivalent (inches)	% of Average (Apr 1)	% of Average (June 22)
Northern	2.2	8	111
Central	5.1	18	164
Southern	3.4	13	93
Statewide	3.8	14	133

The snow covered area and SWE analyses from the National Operational Hydrologic Remote Sensing Center (NOHRSC) shows that abundant snow cover and water content remains in many of the Central and Southern Sierra watersheds. Of particular note is the aerial coverage of snow that remains in the Tuolumne River watershed. While this past week's excessive heat wave has melted snow at peak rates (around 3 inches of SWE per day), there is still a considerable amount of snow yet to melt.

Weather and Climate Outlooks:

The latest six-day forecast indicates accumulated precipitation totals no more than 0.5 inch over the crest of the central and southern Sierra. Of that 0.5 inch of accumulated precipitation, the forecast indicates near 0.1 inch of precipitation each day over the first four days of the forecast. Freezing levels will remain above over 15,000 ft over the Sierras over the next six days.

The NWS Climate Prediction Center (CPC) one-month outlook for July, issued June 15, indicates increased chances of above normal temperatures for central and southern California and increased chances of above or below normal temperatures elsewhere. The same outlook calls for increased chances of above or below normal precipitation for the entire state.

The CPC three-month (June-Aug) outlook, issued June 15, indicates equal chances of above or below normal precipitation for all of the state. The same outlook indicates increased chances of above normal temperatures over all areas of the state.

ENSO-neutral conditions are present. Equatorial sea surface temperatures (SSTs) are near to above average across most of the Pacific Ocean. ENSO-neutral is favored through the Northern Hemisphere fall 2017.

Next Update:

A Bulletin 120 update forecast for conditions as of June 27, will be available Thursday, June 29. If you have any questions regarding this forecast, please contact a member of the Snow Surveys staff.